Technology

TECHNOLOGY TO CLEAN AND SEPARATE BROKEN BATTERY CASINGS ON SIT

The construction of an innovative processing plant that will recycle used car batteries buried at an Ore Superfund site has begun and is expected to start operating by next spring. The Gould Battery site is the first Superfund to use the process, an EPA source says. The process has been designed to handle broken and buried casings, which sometimes jams the standard machinery that is used, according to another EPA source.

A field demonstration of the system processed 10 tons of material an hour, says a source with the cleanup con tor, Canonie Remediation Co. Processing of 90,000 tons of casings at the site, a former lead smelter and battery recycling facility, will take three years, according to EPA. "It'll take longer than a dig and haul," which would requ one and a half years at the most and would likely be dumped in a hazardous waste landfill, an EPA source says. The advantages to using the process plant are that the materials are being recovered and recycled, the source says.

The record of decision for the soils portion of the Portland, OR site requires first excavating the 90,000 tons of battery casings at the site and then recycling the lead and casing materials, according to EPA. Four different parts o the battery will be recycled: metallic lead, non-metallic lead, and the hard rubber and plastic portions of the casing material, according to the Canonie source. The lead products will be separated and then sent to a smelter which produces lead, while the rubber will be used as a fuel supplement and the plastic will be sold to a recycling compan the source says.

The rest of the cleanup calls for stabilization of contaminated soils and the monitoring of air and groundwater, according to EPA.

The process is a combination of existing technologies, one EPA source says. According to a 1991 EPA report, sites that were either part of removal actions or on the national priorities list were lead battery recycling sites, the source says. Previously, stabilization, capping and "no action" have been the selected remedies at buried battery casings sites, according to the source.

The recycling process is not enough to pay for the remediation costs at the site, although some of the money earned from recycling will offset that cost, according to the Canonie source.

DOE looking to replace pump and treat at CA site

STRIPPING TECHNOLOGY AIMED AT RECOVERING ORGANICS UNDER WATER TABLE

EPA and the Department of Energy are testing a new technology for removing organic pollutants from ground ter. The technology, called underground dynamic stripping, uses a combination of in situ steam injection plus vacu extraction to remove contaminants from groundwater both below or above the water table, according to EPA and I sources. The technology is aimed at speeding the rate of removal and increasing the range of organics picked up in underground plumes. A DOE source says that previously vacuum extraction has only worked above the water tabl

The technology is designed to speed the cleanup of organic waste in underground plumes, according to DOE. technology, developed by Lawrence Livermore National Laboratory (LLNL) and the University of California at Berkeley, will be tested to recover gas trapped under the water table at one of two LLNL Superfund sites. The vac extraction steam injection technology is being tested at three other sites, according to an EPA source. "We're look for something to replace pump and treat," a DOE source says, referring to the LLNL site. DOE estimated that the of pump and treat at the LLNL site would take 200 years, the source says. The demonstration project to clean up trapped gas is expected to take four to six weeks, he says. The technology is being reviewed as a case study by EP and DOE also is conducting independent pilots on it.

What makes the technology different from vacuum extraction is the addition of heated steam into the area of contamination, according to a University of California researcher. As the vapor pressure increases, the recovery rate speeds up, he says. Also, the method allows semi-volatile organics to be recovered, according to an EPA source. If only volatile organics need to be removed, vacuum extraction alone could be used, the source says.

DOE will test the method used in conjunction with soil vitrification—electrical soil cleaning—later this fall. Vitrification heats up soil electrically, thereby increasing the rate of vacuum extraction, and has been tested at an LLNL Superfund site, according to DOE. The two processes will be together to see if they augment each other, an EPA source

LLNL will also test [illegible] can locate and quantify [illegible] such as gasoline. The technique, called Raman, is "a simpl way of sampling," says a DOE source. Raman is a s scopic technique that has been tested at the LLNL main fund site and has been used to measure PCE contamina well at another DOE lab.

A DOE source says that the three technologies "hav promise for not only cleaning up" sites, but also lowering